# Normal Thumbnail in RPI - RDK Camera - Design - 2020 - M6

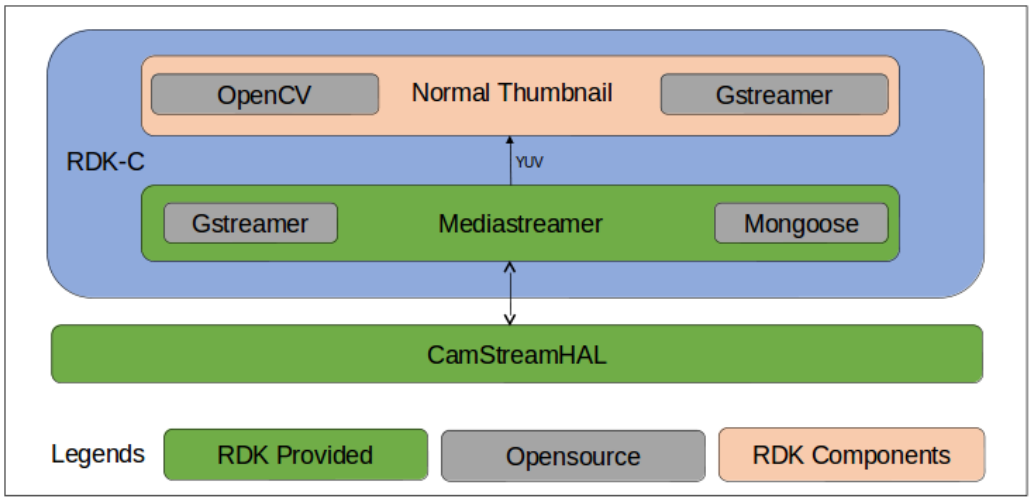


## Introduction

This page dedicated to understanding of High level design for Normal Thumbnail in R-Pi Zero.

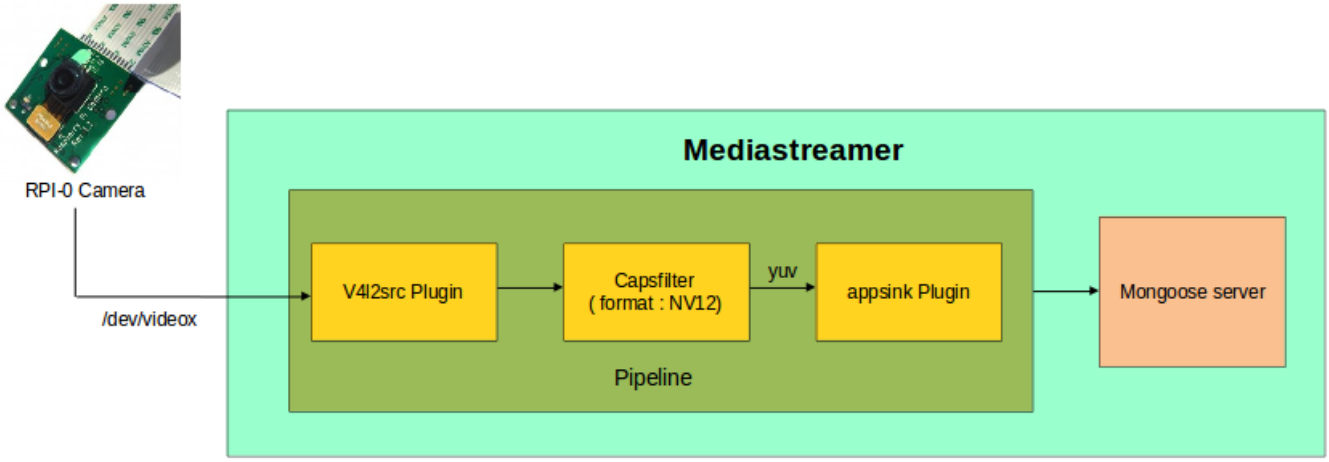
- Supported WiFi connection.
- v4l2 Driver is used to capture YUV data from RPI-0 camera Device.
- /dev/video0 is the RPI-0 camera device to capture data.
- Supported Soc level Gstreamer plugins to capture data from camera device.
- Supported openCV to convert YUV data into JPEG Image.
- Stored generated JPEG image in local /tmp directory.

## Architecture




## Design Considerations

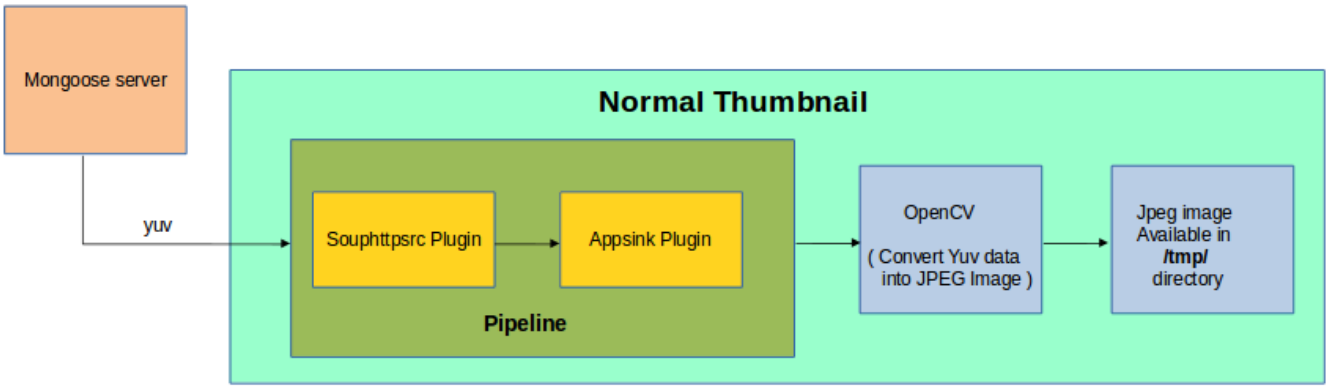
- **Gstreamer Soc Implementation for RPI-0 Camera**




- Enabled V4l2 driver in part of RPI-0 to capture data from /dev/video0  device.
- Implemented soc level gstreamer pipeline with v4l2src plugin and appsink plugin.

- V4l2src plugin is used to capture yuv data from camera through v4l2 driver based on capsfilter( format : NV12 )and transmitted captured yuv data into appsink plugin to write yuv data into 8080 port of mongoose server.
- Registered 8080 port in Mongoose server to listen data.

- **Gstreamer Implementation in Normal Thumbnail**




- Implemented gstreamer pipeline in Normal Thumbnail side with souphttpsrc plugin and appsink plugin.
- Souphttpsrc plugin will get yuv data from Mongoose server from 8080 port and transmitted yuv data into appsink plugin.
- From appsink plugin normal thumbnail will get yuv data and converting it into JPEG image with the help of OpenCV.
- Stored generated JPEG image in local /tmp directory of RPI device.